TABLE OF CONTENTS

TABLE OF FIGURES

TABLE OF ATTACHMENTS

1.0 PURPOSE AND SCOPE

(7.1.1, 7.1.2.a, 7.1.2.b, 7.1.2.c, 7.1.2.d, 7.1.2.e, 7.1.3.a, 7.1.3.b, 7.1.3.c, 7.1.3.d, 7.1.3.e)

This procedure establishes the process for identifying, prescribing and maintaining personal protective equipment (PPE) to protect employees and visitors from injury due to absorption or physical contact hazards commonly associated with Tank Farm processes or environment. PPE includes protection for the eyes, face, head, feet, and hands, as well as general work clothing. Appropriate dress and footwear are required at all times.

This program applies to all Tank Operations Contractor (TOC) activities where PPE may be required. The following requirement areas are not within the scope of this procedure (see referenced sections):

- Cold Stress (TFC-ESHQ-IH-STD-01)
- Respiratory protection (TFC-ESHQ-S_IH-C-05)
- Hanford Site Fall Protection Program (DOE-0346)
- Hearing protection (TFC-ESHQ-S_IH-C-53)
- Heat stress (TFC-ESHQ-S_IH-C-07)
- Safety Signs, Tags, Barriers and Color Coding (TFC-ESHQ-S-STD-18)
- Radiological Control Manual (HNF-5183, Article 325, Appendix 3C)
- Specialized activities involving radiation and chemical contamination, or emergency activities
- Anti-contamination clothing or as low as reasonably achievable (ALARA) devices (e.g., lead-lined gloves, beta face shields) are not controlled by this procedure but their use must be coordinated between RadCon and Industrial Safety to reduce the introduction of other hazards (e.g., heat stress, necessary body movements to prevent injury)
- Process for identifying hazards and documenting the controls (TFC-ESHQ-S_SAF-C-02)
- Process for communicating hazards and controls (TFC-OPS-MAINT-C-02).

2.0 IMPLEMENTATION

This procedure is effective on the date shown in the header.

3.0 RESPONSIBILITIES

3.1 Managers/Supervisors

1. Eliminate or control hazards through process/material substitution, engineering, or administrative actions (in that order of preference) prior to relying on the use of PPE as the protective method.

2. Ensure new and reusable PPE is maintained in clean and sanitary condition and stored in such a manner as to provide protection from deterioration, damage and accumulation of dust, dirt, and animal infestation.

3. Ensure employees are trained in proper use, purpose, maintenance and limitations of PPE.

4. Provide employee re-training:

   - When there is a change in work function/task that renders the current training obsolete
   - When introducing new types of PPE for the hazard
   - When an employee demonstrates an inability to properly use prescribed PPE.

5. Provide employees with all PPE required for work environment.

6. Remove from service, properly dispose of or repair all damaged/defective PPE.

7. Ensure that general work clothing requirements and prescribed PPE are worn as required.

   NOTE: PPE shall NOT be modified from original manufactured condition.

8. Reassess prescribed PPE for applicability:

   - If the hazards of a particular work activity change (e.g., new process/equipment introduced, change in hazardous material usage).
   - If trend analysis identifies a pattern in PPE-related accidents or exposures.

9. Stop work until an evaluation is performed if the level of PPE is found to be inadequate for site conditions.

3.2 Safety and Health Professionals

1. Assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of PPE.

2. Select the PPE that will protect the affected employees from the hazards identified in the hazard assessment.

3. Select PPE in accordance with the requirements listed in Section 4.1 and the guidance in Attachments A, B, and C. Where PPE is necessary to address both chemical and radiological concerns, the Safety and Health and Radiological Control professionals will jointly determine requirements through the work planning process.

4. Base PPE selection on the following requirements:

   - Appropriate for the anticipated hazard

     NOTE: When dealing with the potential hazard of chemical contact, items to be considered include pH, toxicity, volume, routes of exposure, body parts affected, etc.

   - Safe in design and construction
   - Properly fitted to each affected employee
   - ANSI-approved (required where applicable). Examples of these are safety eyewear, footwear and hard hats. Approval can be verified by a distinct code mark or etching on the item in question.
   - Favorable published product performance characteristics.
   - Work area postings.

5. Document selected PPE in the Work Standards.

6. Ensure PPE is properly worn

   NOTE: When dealing with the potential hazard of chemical contact, items to be considered include pH, toxicity, volume, routes of exposure, body parts affected, etc

7. Review engineering design or facility modifications for changes in PPE, as appropriate.

3.3 Employees

1. Obtain PPE prescribed for a given work activity.

2. Inspect prescribed PPE for defects/damage that would compromise its function.

3. Return defective/damaged PPE to their manager/supervisor immediately for disposal, repair or replacement.

4. Wear PPE in accordance with postings (see Attachment C) training and procedural guidelines as required for protection against identified hazards.

5. Maintain PPE in good condition.

6. Do not don any PPE you are not trained and/or qualified to wear.

4.0 PROCEDURE

4.1 Working with PPE

Dress for the nature of the work assignments, exposure to the general work environment, and expected climate conditions. The following minimum dress requirements are established, with the understanding that PPE identified as part of the Job Hazard Analysis (JHA) process takes precedence over these requirements. Additional requirements may be evoked by weather conditions, such as use of safety goggles for high wind conditions (TF-AOP-008).

1. Office/administrative work (regardless of location): Dress appropriate for the work activity and environmental conditions; no specific safety requirements (see attachment A, section 5.1.2 for specific footwear prohibitions in these areas).

   NOTE 1: Performing maintenance activities or material handling activities are not administrative activities, even when performed in office buildings. PPE appropriate for these activities shall be worn as specified in work instructions or the JHA.

   NOTE 2: If office/administrative workers are required to go to the field, the workers will be required to comply with Section 4.1.2 of this procedure.

2. General Field Work: Minimum clothing requirements of sleeved shirt, long pants, and substantial footwear. Safety glasses with side protection are prescribed PPE for General Field Work. PPE may be defined by the JHA for specific work activities. Modesty clothing (shorts) worn without long pants is only allowed from the locker room to the change trailer. No field activities may be done in dress other than those listed. Modesty clothing (shorts and non-sleeved shirts) may be worn in transit to field activities. In addition, long hair and loose fitting clothing shall be restrained around moving machinery. See Attachment A, Section 5.0, for specific hazardous condition requirements when protective footwear is required (such as when work activities could crush, penetrate, or dropped on the foot causing significant injury).

   NOTE 1: Contact lenses may be worn but are not a substitute for eye protective devices.

   NOTE 2: Depending on job assignment and work conditions, wearing watches, rings or other jewelry may be prohibited. Jewelry can catch and cause injuries when climbing, handling materials, or working with machinery.

   NOTE 3: Health Physics Technicians exiting the farms, having doffed their protective clothing and in modesty clothing, may survey out personal items or people as they are coming off the step-off pad as part of the work flow.

   NOTE 4: Operators exiting the farms, having doffed their protective clothing and in modesty clothing, may participate in dirty laundry duties as needed.

   NOTE 5: If the JHA identifies PPE requirement beyond the general PPE requirements listed below, then a Work Control Boundary must be established to prevent unintentional access. The Field Work Supervisor will determine what type (e.g., barrier tape, rope, signage, or stanchion) of boundary is necessary for the duration of the work (See Attachment A, Section 1.1.2)

3. Designated work areas where cranes are operating: Same as General Field Work except that hard hats and protective footwear are required. Other PPE, such as hearing protection, is also required in close proximity to the crane and as specified in work control documents.

4. Laboratories and laboratory complex: Dress should be appropriate for the work activity. Comply with protective clothing requirements that are established in the appropriate analytical procedure, JHA, or specified in the laboratory Chemical Hygiene Plan.

   NOTE: When working with, or handling hazardous chemicals, protection of exposed skin on legs, feet, arms, and hands is required.

5. Management Inspections/Visitor Tours: Dress should be appropriate for the work activity occurring in the area being inspected or toured. The minimum field PPE is safety glasses with side protection and required footwear as defined in Attachment A.

6. Winter Weather Conditions of Snow and Ice: Dress and footwear should be appropriate for the conditions. When ice/snow is predicted, recommended minimum footwear includes substantial footwear with non-slip traction sole to prevent slips and falls. Prior to work in this weather an evaluation of footwear and supplemental traction devices should occur. Traction devices are available to employees at the tool cribs.

7. Shop/Maintenance/Operating Areas: Comply with PPE as posted when entering various areas. Be aware that hazardous activities specific to the area determine the requirement for PPE.

8. Designated Night Work activities: High visibility outerwear (minimum hazard class 2) is required from dusk to dawn when performing field work external to the tank farms or facilities. Additional or stricter requirements may be directed by management. The intent is to ensure employees are conspicuous when they are focusing on a task and not capable of continuous monitoring of vehicle traffic *(This does not include pedestrian foot traffic in parking lots, sidewalks, or walking to or from the job site).* The following table provides two options in lieu of using high visibility outerwear.

Option 1.	Illumination may be provided with a minimum of three foot-candles
Option 2.	Use of a flagger that monitors and controls traffic collocated to the field work activities. The flagger must wear high visibility outerwear with a hazard class 3 rating.

NOTE: When evaluating PPE requirements and the need for higher level protection or if PPE could cause an increased risk, then the PPE with a high level of protection or decreased risk shall be assigned (e.g., electrical work).

NOTE: The selected PPE is documented in accordance with the processes described in TFC-ESHQ-S_SAF-C-02.

Safety and Health Professional

1. Select PPE in accordance with the requirements listed in Section 4.1 and the guidance contained in Attachments A and B.

Managers/ Supervisors

2. Provide training to each employee who is required to use PPE. Each employee shall be trained to know at least the following:

   - The necessity of the PPE
   - The identification of the required PPE
   - The correct ways to don, doff, adjust, and wear the PPE
   - The limitations of the PPE
   - The proper care, use, inspection/maintenance, and PPE life span.

   a. Provide employee re-training:

      - When there is a change in work function/task that renders the initial training obsolete
      - When introducing new types of PPE
      - When employee proficiency appears to be diminishing.

   b. Ensure workers are using PPE properly and that individuals comply with work PPE requirements for the work area.

   c. Correct behaviors and coach individuals relative to inappropriate use or failure to wear correct PPE.

Employee

3. Demonstrate an understanding of the training, and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

4. Receive/obtain PPE prescribed for a given work activity.

5. Wear prescribed PPE on the job in accordance with the work area posting, JHA, work instruction, or procedure requirements, pre-job briefing, and management expectations.

6. Bring co-worker's PPE deficiencies when noticed in the field to their attention and inform supervision of the situation. Stop work if it involves an immediate danger.

5.0 DEFINITIONS
(7.1.3.f)

Hazardous conditions. Consists of the following: motion capable of causing impact, injury, or entanglement, high temperatures, chemicals, light radiation, falling or rolling/pinching objects, sharp objects, flying particles/dust, electrical hazards, and co-located work activity.

High Visibility Outerwear. Shirts, jackets, or vests that have highly reflective properties and a color that is easily discernible from any background.

Personal Protective Equipment. Equipment and clothing beyond minimum dress requirements used to protect the eyes, face, head, foot, and hand from injury due to absorption or physical contact hazards commonly associated with work activities and the work environment. Types of PPE are defined in Attachment A. Levels of PPE are defined in Attachment B.

Minimum dress requirements. Sleeved shirt (over the shoulder), long pants, appropriate footwear and safety glasses with side protection are required for any work other than administrative. Additional protective equipment may be required depending on job task, location, and/or environmental conditions.

Modesty clothing. Lightweight shorts and lightweight sleeved shirt that can be worn underneath outer protective garments.

6.0 RECORDS

No records are generated in the performance of this procedure.

7.0 SOURCES

7.1 Requirements

1. 10 CFR 851, "Worker Safety and Health Program."

2. 29 CFR 1910, Subpart I, "Personal Protective Equipment."
   a. 1910.132, "General requirements."
   b. 1910.133, "Eye and face protection."
   c. 1910.135, "Head protection."
   d. 1910.136, "Foot protection."
   e. 1910.138, "Hand protection."

3. 29 CFR 1926, Subpart E, "Personal Protective and Life Saving Equipment."
   a. 1926.28, "Personal protective equipment."
   b. 1926.95, "Criteria for personal protective equipment."
   c. 1926.96, "Occupational foot protection."
   d. 1926.100, "Head protection."
   e. 1926.102, "Eye and face protection."
   f. 1926.107, "Definitions applicable to this subpart."

7.2 References

1. ANSI Z41, "Personal Protection - Protective Footwear."

2. ANSI Z87.1, "Practice For Occupational and Educational Eye and Face Protection."

3. ANSI Z89.1, "Safety Requirements For Industrial Head Protection."

4. ANSI Z35.1-2, "Accident Prevention Signs."

5. ANSI Z535.1-6, “Environmental and Facility Safety Signs.”

6. HNF 5183, Article 325, Appendix 3C, “Radiological Control Manual.”

7. Forsberg, K. and Mansdorf, S.Z., “Quick Selection Guide to Chemical Protective Clothing,” Fifth edition, Wiley, 2007.

8. RPP-34147, “Tank Waste Dermal Exposure Assessment.”

9. TFC-BSM-CP_CPR-C-01, “Purchasing Card (P-Card).”

10. TFC-BSM-IRM_DC-C-02, “Records Management.”

11. TFC-ESHQ-IH-STD-01 “Cold Stress”

12. TFC-ESHQ-S_IH-C-07, “Heat Stress Control.”

13. TFC-ESHQ-S_IH-C-53, “Occupational Noise Exposure Control and Hearing Conservation.”

14. TFC-ESHQ-S_SAF-C-02, “Job Hazard Analysis.”

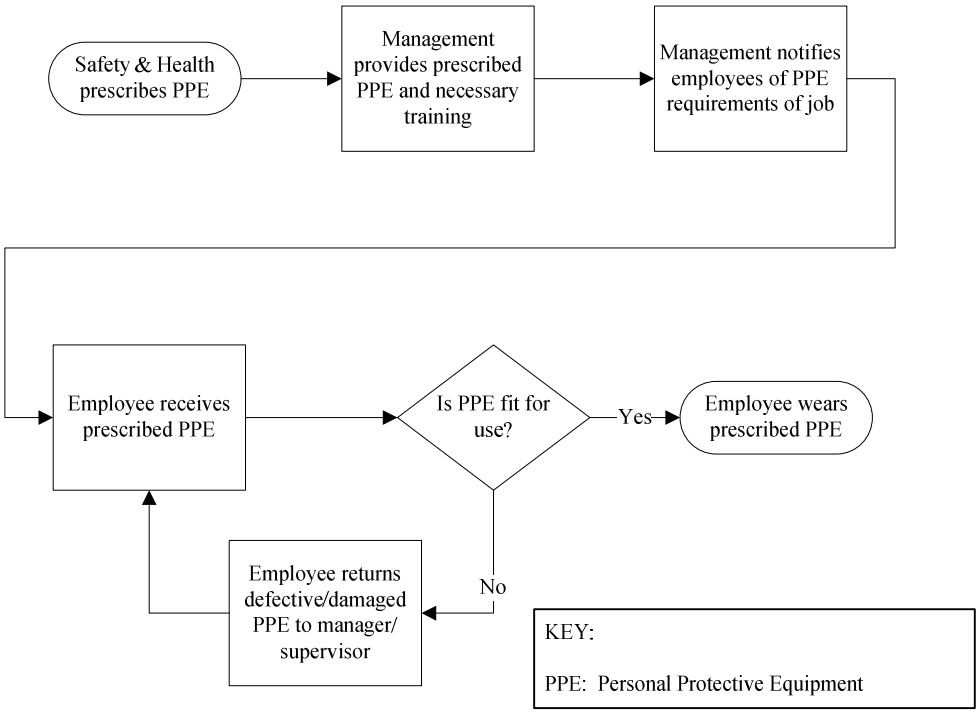
15. TFC-ESHQ-S-STD-18, “Safety Signs, Tags, Barriers, and Color Coding.”

16. TFC-OPS-MAINT-C-01, “Tank Operations Contractor Work Control.”

17. TFC-OPS-MAINT-C-02, “Pre-Job Briefings and Post-Job Reviews.”

18. TFC-OPS-OPER-C-13, “Technical Procedure Control and Use.”

Figure 1. PPE Process.



ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE

1.0 GENERAL

1.1 Hazardous Condition Assessment

Hazard conditions requiring PPE are categorized below by area of body protected. This information is to serve as general guidance as to the hazard assessed. The safety/health professional will make final decisions as to the appropriateness of PPE for a given situation.

1.2 Work Control Boundary access requirements may be posted as below to indicate PPE requirements within the boundary beyond those required immediately outside the boundary.

2.0 EYE/FACE PROTECTION

2.1 Hazardous Condition

Protection is required where there is a potential for injury from flying particles, molten metal, liquid chemicals, acid or caustic liquids, chemical gases or vapors, potentially injurious light radiation, or a combination of these.

For performance of chipping or grinding, face shields are to be worn.

NOTE: With the exception of task specific PPE requirements, or collocated work creating eye hazards, the following areas and activities are excluded from safety glass requirements:

- Administrative buildings and office trailers
- Parking areas and transitioning between administrative areas
- Change trailers
- Control room areas (e.g., 242-A Evaporator, ETF)
- Monitoring areas where the primary activity is to observe screens or displays (e.g., HMIs, etc.)
- Designated areas within non-administrative facilities that have been evaluated and posted to identify no safety glasses required

- Personnel conducting MOPs in areas not requiring eye protection and no eye hazards exist.

2.2 Selection/Use Criteria

Protection will conform to specifications of American National Standards Institute (ANSI) Standard Z87.1, “Practice for Occupational and Educational Eye and Face Protection.”

All safety glasses must have side protection that provides side impact resistance. Side protection may be an integral part of the frame or lens, or a separate side shield.

ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE (cont.)

Sunglasses should not be worn indoors. Tinted lens safety glasses are authorized only as follows: No. 1 or 2 rose for indoor use (where additional glare protection is needed); No. 2 gray for outdoor use (where filtering of bright light (e.g., sunlight) is needed).

NOTE: No. 2 gray lenses are considered "sunglasses" and are not intended for indoor usage.

Transition lenses may be authorized, but only for employees who do not operate equipment between indoor and outdoor locations, or who are not otherwise involved in activities requiring critical acuity (fast reaction to visual stimuli).

NOTE: The rate at which it takes for a tint change to occur in transition lenses is not instantaneous (e.g., it may take a minute for the fading process to occur), and may present a hazard to workers moving from outdoor light to areas of lower illumination (e.g., indoors).

2.3 Prescription Safety Eyewear (Safety Glasses) Program

Ordinary prescription eyewear does not provide adequate protection from injury to the eyes from impact hazards, and does not meet ANSI Z87.1 eye protection specifications. Therefore, it is the policy to provide protective prescription eyewear to qualified active employees who need corrective lenses for vision and whose job routinely requires the use of safety eyewear for protection.

An ultraviolet (UV) coating may be requested when ordering prescription safety eyewear with glass lenses. To ensure worker protection, an employee may be issued non-prescription eyewear for use over the top of their regular street-wear prescription glasses until prescription safety glasses are ordered and received.

Employees are eligible for one pair of prescription safety glasses every 24 months (on an as-needed basis) while under Washington River Protection Solutions, LLC (WRPS) employment. Purchase of safety glasses for construction, services, or task based subcontractors is the responsibility of that subcontractor. Subcontractors are required to comply with the same WRPS requirements for use of protective equipment.

Prescription safety glasses can be obtained through the existing P-Card procurement process noted in TFC-BSM-CP_CPR-C-01.

NOTE: The terminology "on an as-needed basis" implies that the eyewear shows sufficient signs of normal wear-and-tear, or the result of an optical examination evidences a vision change necessitating a revised prescription.

Exception 1: Additional replacement or repair costs during a 24-month period will be covered by WRPS (with manager approval) for prescription safety glasses that have been damaged as a result of a task-related incident occurring during the course of job performance.

Exception 2: Additional replacement costs during a 24-month period will be covered by WRPS (with manager approval) when the result of an optical examination reveals a change in vision necessitating a change in corrective lens.

ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE (cont.)

Full-face respirators present a unique situation for employees who need prescription glasses. The use of special glasses and mounts inside the face piece of the respirator may be necessary to provide/maintain an adequate seal. When an employee's prescription eyewear will not fit into a full-face respirator with the appropriate mounts, the ordering of custom prescription optical inserts that are compatible with the respirator will be processed as directed in the Purchasing Card (P-Card) procedure TFC-BSM-CP_CPR-C-01. When an employee must wear optical inserts as part of the face piece, the face piece and lenses shall be fitted by qualified individuals to provide good vision, comfort, and a gas-tight seal.

3.0 HEAD PROTECTION

3.1 Hazardous Condition

Protection is required where there is a potential danger of head injury due to the hazards of falling or flying objects, electrical shock, or burns.

3.2 Selection/Use Criteria

- Shall conform to the specifications of ANSI Z89.1 and be non-conductive
- Shall be worn only as designed (e.g., do not wear backwards unless imprinted by the manufacturer indicating that it can be worn in this manner)
- Hard hats shall be worn in a manner that prevents objects from being placed between the top of the hard hat suspension and the inner shell of the hard hat. It is an acceptable practice to wear garments or similar articles on the head so long as they do not intrude into the open space between the hat's suspension and the shell of the hat. Acceptable head wear items include items such as fleece liners, zero hoods, kerchief, bandannas, respirator face pieces, welder's caps, and similar close form fitting articles. (Baseball caps are NOT allowed to be worn inside a hardhat because the impact of a falling object could force the "button" to cause serious injury.)
- Shall not be painted.
- Hard hats shall be replaced as user checks reveal:
  - Cracks, nicks, or abrasions appear in the shell surface
  - Shiny surface appears dull or chalky
  - Shell becomes brittle
  - Cracking, fraying, or tearing in the suspension
  - The hard hat has fallen from an elevation
  - If the wearer is involved in an impact accident.

ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE (cont.)

NOTE: Service life is determined by the work environment, chemical exposure, sunlight and its care during use. Proper storage before use in the warehouse and in-frequent use by office personnel may extend the service life. Manufacturers recommend replacing hard hats after 5 years of use, and the suspension every year; however, proper checks before use may extend the service life beyond the 5 and 1 year periods. It is acceptable for a hard hat that has been inspected before use to be used beyond the 5 year period if none of the items listed above are observed. Refer to the manufacture date molded inside hard hat to determine possible expiration date.

4.0 HAND PROTECTION

4.1 Hazardous Condition

Protection is required where there is a potential for hand injury due to exposure to such hazards as: skin absorption of harmful substances, severe cuts or lacerations, severe abrasions, punctures, chemical burns, thermal burns, or harmful temperature extremes.

4.2 Selection Criteria

Selected based on published product performance characteristics, degree of dexterity required to perform the work/task, and the appropriate application for protection against the hazard(s) identified.

5.0 FOOT PROTECTION

5.1 (General) Footwear

5.1.1 Hazardous Condition (Office/Administrative/Laboratory/Janitorial)

For work environments with little to no specific foot hazards (e.g., office/administrative locations) general footwear is acceptable. General footwear includes a fully enclosed toe and heel mechanism for laboratory, or janitorial work tasks. General footwear is also appropriate for all office/administrative areas. In all cases, footwear should be appropriate to the job and work tasks to be performed.

NOTE: An exception is made for employees working solely in office or administration settings; they are permitted to wear shoes/sandals with open toes and strapped heels. This type of footwear may also be worn while transitioning between administrative buildings, mobile offices, and their parking areas. If the job duties or location require entry into other non-office work areas, then footwear appropriate to the job and work task will be worn by the worker.

5.1.2 Selection Criteria

General footwear is not intended to meet ANSI requirements; however, general footwear has a fully enclosed toe and heel and is selected with an appreciation for the nature and environment of the work activity.

ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE (cont.)

NOTE: An exception is made for employees working solely in office or administration settings; they are permitted to wear shoes/sandals with open toes and strapped heels. This type of footwear may also be worn while transitioning between administrative buildings, mobile offices, and their parking areas.

If the job duties or location require entry into other non-office work areas, then footwear appropriate to the job and work task will be worn by the worker.

Athletic shoes are considered appropriate general footwear.

Athletic shoes are considered appropriate for laboratory/janitorial footwear if they meet the following criteria:

- Fully encloses the foot
- Not made of mesh
- Made of a material such as leather or a comparable synthetic material
- Has non-skid soles.

Prohibited office footwear:

- Bare feet
- Beach type footwear (e.g., Crocs™, flip-flops)
- Moccasins, slippers, and other soft soled shoes
- Toe-shoes/FiveFinger/Barefoot style shoes

5.2 Substantial Footwear

5.2.1 Hazardous Condition (Worksite)

Shop/maintenance/operating areas and other non-office/administrative work areas present hazards that are not found inside the office environment. Footwear should be appropriate to the job and work tasks to be performed. Performing general field work requires substantial footwear as a minimum.

Footwear shall have non-slip soles and traction patterns for exposure to snow and ice conditions.

5.2.2 Selection Criteria

Substantial footwear is required for field work tasks due to the prevalence of uneven walking/working surfaces and the gravel terrain in and around the tank farms.

Substantial footwear is a shoe or boot that:

- Is made with leather or other material of sturdy construction
- Fully encloses the foot
- Has a semi-rigid non-slip sole pattern
- Has a well-defined traction pattern.

ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE (cont.)

Over the ankle footwear is required while performing tasks off paved or concrete surfaces due to the prevalence of uneven walking/working surfaces in and around the tank farms. Athletic shoes

(Regardless of composition) are not considered substantial footwear and will not be worn in the tank farms.

WRPS Safety will evaluate the work and associated tasks and document this evaluation on the JHA.

The cost for purchase of substantial footwear will be borne by the employee.

5.3 Protective Footwear

5.3.1 Hazardous Condition (Task Defined)

Where there is an increased danger of foot injury; when carrying or handling materials such as packages, SCBA tanks, objects, parts or heavy tools, that could be dropped; where there is the potential for falling/rolling objects; where sharp objects such as nails, wires, tacks, screws, large staples, or scrap metal could be stepped on piercing the sole; or where there is the potential for foot exposure to an electrical hazard; protective footwear shall be required. These aspects will be considered when performing a job hazard analysis to determine whether protective footwear is required.

NOTE: Protective footwear is required when there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole,

5.3.2 Selection Criteria

NOTE: On March 1, 2005, ANSI Z41 was withdrawn and replaced by then new American Society of Testing Material (ASTM) International Standards. New rated footwear will contain the ASTM identification labeling. Older rated footwear may still have the ANSI Z41 Pt99 labeling. Either is acceptable.

Protective footwear (e.g., safety boots with metal or composite toes) shall conform to the specifications of ASTM F2413-05 Standard Specification for Performance Requirements for Foot Protection (formerly American National Standards Institute (ANSI) Standard Z41, "American National Standard for Personal Protection-Protective Footwear" for its performance criteria).

All protective footwear shall be shoes or boots composed of leather or other material of sturdy construction with over the ankle protection, meeting, at a minimum, impact and compression resistance as noted below and any of the other categories of protection as defined by the employee job description or job hazard analysis. Athletic type protective shoes are prohibited.

- **Impact- and compression-resistant**, which uses a steel or nonmetallic toe cap to protect against falling objects or crushing from heavy rolling objects. (NOTE: A non-metallic toe cap of molded polymer or fiberglass composite will not activate metal detectors). The level of impact and compression protection correlating to 75 foot-pounds of force (Class 75 rating) is required. (I = Impact; C = Compression).

ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE (cont.)

- **Metatarsal**, which provides similar protection against falling objects to the area of the foot between the ankle and the toes. (MT = Metatarsal).

- **Puncture-resistant**, where the mid-sole, usually comprised of steel, resists penetration from sharp objects; such as nails or broken glass. (PR = Puncture Resistant).

- **Electrical hazard**, where the non-conductive sole and heel of the shoe or boot is designed to protect workers from electric shock from 600 volts AC or less, under dry conditions. (EH = Electrical Hazard).

EXAMPLE: The following are examples of ANSI code inscriptions on a piece of protective footwear:

- ASTM F2413-05 or ANSI Z41 PT 99
- FI/75 C/75 MT/75
- Cd 1 EH
- PR.

Line #1: ASTM F2413-05 or ANSI Z41 PT99. This line identifies the ASTM F2413-05 international standard or ANSI Z41 standard. The 05 indicates the year of the ASTM standard, or the letters PT indicate the protective section of the ANSI standard. This is followed by the last two digits of the year of the standard with which the footwear meets compliance (1999).

Line #2: FI/75 C/75 MT/75. This line identifies the applicable gender (M or F; here it is F) for which the footwear is intended. It also identifies the existence of impact resistance (I), the impact resistance rating (75 foot-pounds). This line can also include a metatarsal protection designation (MT) and rating (75 foot-pounds).

Lines #3 & 4: Cd 1 EH; PR. This area of the label designates conductive properties (Cd) and Work type (1 or 2), electrical hazard (EH) and puncture resistance (PR), if applicable.
The protective identification ANSI code will be legible (imprinted, stamped, stitched, etc.) on at least one shoe of each pair.

Protective footwear can be obtained as directed in the Purchasing Card (P-Card) procedure TFC-BSM-CP_CPR-C-01 and by completing and submitting Hanford site form A-6003-769. The manager approving the purchase is responsible for determining that the end user requires the protective footwear being requested for performance of task assignments, ensures that the appropriate blocks are checked on the site form, and verifies that the transaction made by the employee is in compliance with WRPS policy.

Employees under WRPS employment are eligible for a new pair of ASTM/ANSI-approved protective footwear initially, and every twelve months thereafter. This 12-month protective footwear replacement frequency may be applied only where the shoe or boot shows sufficient signs of wear and tear to necessitate replacement.

Purchase of protective footwear for construction, services, or task-based subcontractors is the responsibility of that subcontractor. Subcontractors are required to comply with the same WRPS requirements for use of protective equipment, including footwear.

ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE (cont.)

6.0 CHEMICAL PROTECTION

6.1 Particulate

6.1.1 Hazardous Condition

Where particulate material constitutes a contact hazard from the chemical composition of the particulate (e.g., sodium hydroxide solid, beryllium).

6.1.2 Selection Criteria

Barrier fabrics not damaged by the chemical constituents of the particulate that prevent particulate contact with the skin should be selected.

Impermeable barrier fabrics that are selected must also be evaluated for heat stress conditions. More information can be found in TFC-ESHQ-S_IH-C-07.

6.2 Liquid

6.2.1 Hazardous Condition

Where the chemical composition known, anticipated or suspected workplace liquids constitutes a skin contact and/or absorption hazard (e.g., sulfuric acid, methyl isobutyl ketone).

6.2.2 Selection Criteria

Barrier fabrics impermeable to the hazardous chemical constituents of known, anticipated, or suspected workplace liquid hazards shall be selected. Garment selection will be based on chemical constituents found in the work environment, concentrations of those chemical constituents, published product performance characteristics, degree of mobility required to perform the work/task, and the appropriate application for protection against the hazard(s) identified. "Quick Selection Guide to Chemical Protective Clothing, Fifth Edition" is a reference to be used as a starting point for guidance on chemical protective clothing material and service life information.

6.3 Tank Waste and Tank Condensate

6.3.1 Hazardous Condition

Some of the chemicals in tank waste and/or tank condensate can damage the skin (i.e., corrosive), irritate the skin (i.e., dermatitis), or be absorbed through the skin. Industrial Hygiene should be consulted in the work planning process. Engineering controls and work practices must be used to avoid contact with tank waste (highly corrosive) and condensate. PPE is the last barrier to prevent skin contact. Tank wastes having high potential skin absorption hazards are also high in radionuclides. Controls for radiological and contamination protection (time, distance, shielding, PPE) also limit potential for skin contact and absorption. Dry tank waste does not present a skin absorption hazard until it becomes wet, because for a chemical to have an absorption hazard it must be a liquid or a vapor, or come into contact with liquid. Keeping dry tank waste away from

moisture and the skin (a potential source of moisture) prevents it from being a skin absorption hazard.

6.3.2 Selection Criteria

- General tank waste work. For most tank waste work (waste form wet or dry) on tanks listed in Table 1, if engineering controls and work practices to prevent skin contact are implemented, then standard protective clothing is adequate. Standard protective clothing is long-sleeve cotton or Orex anti-C's, gloves (e.g., leather, canvas anti-C, rubber anti-C, or nitrile, as appropriate) and eye protection. Barrier fabrics impermeable to liquids will be selected for wet/liquid waste.

- Insufficient information. Some tanks have not been adequately sampled for chemical composition of tank waste. For tanks not listed in Table A-1, a chemical exposure hazard analysis will be done per TFC-PLN-34 to determine the type of skin protection that will be used when personnel may contact tank waste or tank condensate.

ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE (cont.)

Table A-1. Tanks Not Requiring Silvershield PPE.

241-A-101	241-BX-103	241-S-112
241-A-102	241-BX-104	241-SX-101
241-AN-101	241-BX-105	241-SX-102
241-AN-102	241-BX-107	241-SX-103
241-AN-103	241-BX-109	241-SX-104
241-AN-104	241-BX-110	241-SX-105
241-AN-105	241-BX-111	241-SX-106
241-AN-106	241-BX-112	241-SX-108
241-AN-107	241-BY-101	241-SX-113
241-AP-101	241-BY-102	241-SX-115
241-AP-102	241-BY-103	241-SY-101
241-AP-103	241-BY-104	241-SY-102
241-AP-104	241-BY-105	241-SY-103
241-AP-105	241-BY-106	241-T-102
241-AP-106	241-BY-107	241-T-104
241-AP-107	241-BY-108	241-T-105
241-AP-108	241-BY-109	241-T-107
241-AW-101	241-BY-110	241-T-109
241-AW-102	241-BY-111	241-T-111
241-AW-103	241-BY-112	241-T-112
241-AW-104	241-C-101	241-T-201
241-AW-105	241-C-102	241-T-202
241-AW-106	241-C-103	241-T-203
241-AX-101	241-C-104	241-T-204
241-AX-102	241-C-105	241-TX-104
241-AX-103	241-C-106	241-TX-113
241-AX-104	241-C-107	241-TX-116
241-AY-101	241-C-108	241-TX-118
241-AY-102	241-C-109	241-TY-104
241-AZ-101	241-C-110	241-TY-106
241-AZ-102	241-C-111	241-U-102
241-B-101	241-C-112	241-U-103
241-B-102	241-C-201	241-U-105
241-B-103	241-C-202	241-U-106
241-B-104	241-C-203	241-U-107
241-B-106	241-C-204	241-U-108
241-B-107	241-S-101	241-U-109
241-B-108	241-S-102	241-U-110
241-B-109	241-S-103	241-U-111
241-B-110	241-S-104	241-U-112
241-B-111	241-S-105	241-U-201
241-B-201	241-S-106	241-U-202
241-B-202	241-S-107	241-U-203
241-B-203	241-S-109	241-U-204
241-B-204	241-S-110	
241-BX-101	241-S-111	

ATTACHMENT A – PPE SELECTION CRITERIA AND GUIDANCE (cont.)

7.0 ARC FLASH PROTECTION PPE DURING RESPIRATOR USE

Paulson Extended brim Arc Flash Face Shield shall be worn as indicated in Table A-2.

Table A-2. Conditions for Wearing Face Shield.

Hazard/Risk Category	Paulson Extended Brim Face Shield	Balaclava	Approved Respiratory Equipment
Per DOE-0359: *(1) The circuit is rated 240 volts or less.* *(2) The circuit is supplied by one transformer or generator.* *(3) The transformer or generator supplying the circuit is rated less than 125 kVA.*	Not required (optional)	Not required (optional)	• Scott- AV3000 Poly/Kevlar - Scott-SCBA/Carry-Air - Scott APR with P100 or combo cartridges • MSA ½ Mask- - P100 or GME-P100 P/N 815300 Note: face shield will not fit over metal filters
0	Required	Not required (optional)	
1	Required	Not required (optional)	
2/2*	Required	Required	
15 cal/cm^2 or greater alternate means on isolation and required PPE shall be evaluated.			

8.0 Approved use of Orange and Red Coveralls

Use of Red and Orange coveralls are identified in table A-2 below.

Table A-2. Conditions for Red and Orange Coveralls.

Hazard	PPE	Note:
Hot Work: Welding/Cutting/Grinding	Red Coveralls	Orange coveralls **shall not** be worn for hot work.
Work within an Arc Flash Boundary	Orange Coveralls	Red coveralls **shall not** be worn for electrical or work within and arc flash boundary

ATTACHMENT B – LEVELS OF PPE

1.0 LEVEL D PERSONAL PROTECTIVE EQUIPMENT

Level D PPE is the minimum basic level of personal protection equipment used in the tank farms or areas or operations where no air contaminants are present that would require respiratory protection. While en route from one work location to another, modesty clothing is acceptable as the minimum dress. Workers exiting a contaminated area may remove protective clothing at the step-off pad and proceed to the change trailer in modesty clothes. No work may be performed while wearing only modesty clothing (shorts) unless otherwise specified (see note 3-4 in section 4.1 above). Specific PPE requirements will be determined by hazards associated with the work activity and may be used as appropriate:

- Coveralls and/or street clothes - covering the legs and shoulders
- Anti-contamination clothing (as required by Health Physics if radiological hazards exist)
- Safety glasses or goggles
- Substantial footwear or protective footwear as defined by location, activity or JHA
- Hard hat
- Hearing protection
- Gloves.

2.0 LEVEL C PERSONAL PROTECTIVE EQUIPMENT

Level C PPE is required where airborne contaminant levels are known or characterized, and a potentially hazardous atmosphere exists. Use of Level C PPE is not permitted in oxygen-deficient atmospheres (less than 19.5 percent oxygen), for contaminants with poor warning properties (odor detection level is greater than the threshold limit value), or when contaminant concentrations exceed the respirator limits. Atmospheric contaminants will not adversely affect the skin or be absorbed through exposed skin. Personnel working inside the tank farms and wearing Level C PPE may wear the following as appropriate:

- Full-face air-purifying respirator (with appropriate filters and/or canisters and appropriate prescription eye wear without temple bars)
- Disposable chemical-resistant coveralls
- Anti-contamination clothing (as required by Health Physics if radiological hazards exist)
- Protective footwear
- Chemical-resistant shoe covers
- Hard hat
- Inner chemical-resistant gloves (impervious to chemical agent of interest)
- Outer chemical-resistant gloves (impervious to chemical agent of interest)
- Hearing protection.

ATTACHMENT B – LEVELS OF PPE (cont.)

3.0 LEVEL B PERSONAL PROTECTIVE EQUIPMENT

Level B PPE is required where airborne contaminant levels are unknown, and a potentially hazardous atmosphere exists. Level B PPE may be used only when it is unlikely that workers will be exposed to high concentrations of contaminants or chemical splashes that will affect the skin or be absorbed by it. Level B is generally the same as Level C, except the respiratory protection is upgraded to air-supplied respirator or self-contained breathing apparatus (SCBA). Personnel working inside the tank farms with designated Level B PPE may wear the following as appropriate:

- Air-supplied respirator or SCBA
- Disposable chemical-resistant coveralls
- Protective footwear
- Chemical-resistant shoe covers
- Hard hat
- Inner chemical-resistant gloves (impervious to chemical agent of interest)
- Outer chemical-resistant gloves (impervious to chemical agent of interest)
- Hearing protection.

4.0 LEVEL A PERSONAL PROTECTIVE EQUIPMENT

Level A PPE is required where atmospheric conditions are immediately dangerous to life and health (IDLH). In rare circumstances, it may be necessary for personnel in the tank farms to wear Level A PPE. Level A PPE has the same maximum respiratory protection as Level B; however, the highest available skin and eye protection are required for Level A. Personnel working inside the tank farms with designated Level A PPE may wear the following as appropriate:

- Air-supplied respirator or SCBA
- Fully encapsulating, chemical-resistant suit (suit material must be compatible with substances involved)
- Coveralls
- Protective footwear
- Chemical-resistant shoe covers
- Hard hat
- Inner chemical-resistant gloves
- Hearing protection.

ATTACHMENT C - PPE SIGNS IN SHOP AREAS

PPE safety signs in work areas will be consistent with ANSI standards and should be consistent throughout the work areas. ANSI Z585.2 standard determines the hazard level listed on the sign (warning/caution).

Area safety representatives will be directly involved with their work area postings to ensure that the correct ANSI standard signs and language is provided for the hazards present.

Below are examples of the correct signs with example text included.